

**From:** Dave Russell/ESC/R3/USEPA/US  
**Sent:** 6/1/2012 3:32:31 PM  
**To:** Cynthia Caporale/ESC/R3/USEPA/US@EPA  
**CC:**  
**Subject:** Fw: Contract and Testing Specifics

Just an fyi cc

----- Forwarded by Dave Russell/ESC/R3/USEPA/US on 06/01/2012 03:32 PM -----

**From:** Dave Russell/ESC/R3/USEPA/US  
**To:** Fred Foreman/ESC/R3/USEPA/US@EPA  
**Cc:** Ex. 4 - CBI @TechLawInc.com>, Richard Rupert/R3/USEPA/US, Kelley Chase/R3/USEPA/US@EPA  
**Date:** 06/01/2012 03:31 PM  
**Subject:** Re: Fw: Contract and Testing Specifics

Fred,

Questions and comments follow:

1. **Total coliforms and E. coli:**

- a. Need clarification regarding the method to be used, since "SM9223B" includes both Colilert and Colisure media and two formats of the multiple-tube technique. I assume they will use **Colilert QuantiTray/2000**, but they have not explicitly said so. Please have that confirmed.
- b. Is the lab certified for this method?
- c. Colilert Quantitray/2000 is a perfectly good EPA-approved method for determining whether water is safe to drink, and for enumerating total coliforms and E. coli.
- d. Note that Colilert Quantitray/2000 detects and enumerates total coliforms and E. coli (MPN/100 mL), whereas the previously used membrane filtration method (SM9222B) detected and enumerated total coliforms and fecal coliforms (CFU/100mL). Further investigation would be required to determine whether the data produced by the new method is comparable to the data produced by the previous method. EPA encourages laboratories (SDWA Lab Cert. Manual, paragraph 5.1.7) to perform parallel testing between a new method and an old method (using the waters typically encountered by that laboratory) whenever a change in methods is made.
- e. Regarding the statement, "IDEXX method, which has a 30-hour holding time": Holding times are not prescribed by the method used, but by the rules and regulations under which the samples are collected and analyzed. If the Total Coliform Rule or the Ground Water Rule is applied to these water samples--to be analyzed for total coliforms and E. coli--the holding time is 30 hours.

2. **Heterotrophic Plate Count:**

- a. The holding time for heterotrophic plate count is 8 hours under the Surface Water Treatment Rule. HPC is only used as an indicator under the SWTR. The 8-hour holding time for HPC is also stated in the SDWA Lab Cert Manual and twice in Standard Methods. In Standard Methods, the 8-hour holding time can be found at 9060 B(1)b : *"Do not exceed 8 h holding time for heterotrophic plate counts."* That is a clear and emphatic statement. It is stated again at 9215 A(4): *"The recommended maximum elapsed time between collection and analysis of samples is 8 h (maximum transit time 6 h, maximum processing time 2 h)." That statement is followed by this: "When analysis cannot begin within 8 h, maintain sample at a temperature below 4C but do not freeze. Maximum elapsed time between collection and analysis must not exceed 24 h."*

Clearly, based on repeated statements in the SDWA Lab Cert Manual and Standard Methods, 8 hours is the holding time to enforce.....and for good reason. The two papers on bacteriological holding times published by EPA microbiologists in Cincinnati indicate that the bacterial community in a sample can begin to change as soon as the sample is collected. Bacterial abundance may increase, decrease or remain the same. Those findings make the unusual "last resort" 24-hour option offered by Standard Methods scientifically indefensible.

b. EPA does not recommend use of R2A agar with the 48-hour pour plate method. R2A was developed by Dr. Don Reasoner (EPA Microbiologist, retired) to allow a wide spectrum of bacteria to grow without fast growing bacteria suppressing slow growing species. Despite what Standard Methods might say, R2A was design to be used with a long incubation period and a low incubation temperature. When used with a 7-day incubation period at a temperature of 20-28C, R2A encourages the growth of a wider variety of bacteria and therefore will generally produce higher HPC counts, compared to the pour plate HPC method. If the pour plate method (plate count agar with a 48 hour incubation at 35C) is to be used, the data generated will not be easily compared to the 7-day R2A spread plate data obtained previously.

c. It is acknowledged that Standard Methods 9215 A and B mixes up methods and agars, but clarification has been obtained from Jennifer Best (Microbiologist, ORD Cincinnati), specifically R2A is not approved for use under the Surface Water Treatment Rule, meaning it is not approved for use with the 48 hour pour plate method. Note that when Standard Methods states that *"For compliance monitoring purposes under the U.S. EPA Surface Water Treatment Rule....provision on heterotrophic bacteria, incubate pour plates at 35C for 48 h. Otherwise, select from among recommended times and temperatures....."*, the latter sentence refers to R2A agar. R2A uses one of the *"recommended times and temperatures".....*specifically 7-days at 20-28C.

d. Whatever HPC method is used, the laboratory should have experience and be certified for that method.

Please send questions if you have them.

Dave

From: Fred Foreman/ESC/R3/USEPA/US  
To: Dave Russell/ESC/R3/USEPA/US@EPA  
Cc: [REDACTED] Ex. 4 - CBI [REDACTED]@TechLawInc.com>, Richard Rupert/R3/USEPA/US, Kelley Chase/R3/USEPA/US@EPA  
Date: 06/01/2012 09:07 AM  
Subject: Fw: Contract and Testing Specifics

Dave,

Please read below and provide feedback on proposed method mods.

Thanks

Fred Foreman, Chief  
Technical Services Branch  
Office of Analytical Services & Quality Assurance  
US EPA Region III  
Ft. Meade, Maryland  
410-305-2629

----- Forwarded by Fred Foreman/ESC/R3/USEPA/US on 06/01/2012 09:06 AM -----

From: [REDACTED] Ex. 4 - CBI [REDACTED]@TechLawInc.com>  
To: [REDACTED] Ex. 4 - CBI [REDACTED]@TechLawInc.com>, Fred Foreman/ESC/R3/USEPA/US@EPA, Richard Rupert/R3/USEPA/US, Richard Fetzner/R3/USEPA/US@EPA, Kelley Chase/R3/USEPA/US@EPA  
Date: 05/31/2012 10:34 PM  
Subject: FW: Contract and Testing Specifics

All:

I had arranged a couple weeks prior to the sampling to have Northeastern Environmental Laboratories (NEEL) to do the Dimock microbial testing. NEEL did the previous testing and agreed to do it at the same price. I did not find out about

the change of ownership until the middle of the sampling last week. Please refer to the e-mail below regarding differences in the testing being done. I believe the lab used a 7-day incubation period for the HPC on the previous sampling rounds.

**Ex. 4 - CBI**

TechLaw, Inc.

**Ex. 4 - CBI**

(office)  
(mobile)

**From:** **Ex. 4 - CBI**@microbac.com]

**Sent:** Thursday, May 31, 2012 3:06 PM

**To:** **Ex. 4 - CBI**

**Subject:** Contract and Testing Specifics

**Ex. 4 - CBI**

Attached is the signed contract for Microbac Laboratories. Also, I have included a copy of our testing procedures as they differ from the procedures initially conducted by Northeast Environmental.

The major differences are in the method reference for Coliform / ecoli (fecal). We use the IDEXX method, which has a 30 hour holding time, and give you a quantitative count for both coliform and ecoli.

For the HPC method, we reference standard methods which specifies a 24 hour holding time. We were able to use the R2A agar that you specified, but we only have incubated the samples for 48 hours as per the EPA protocol.

Also, I noticed you requested sterile water for next week. Will you have additional samples? If so, when can we expect the sampling events to occur?

Thanks,

**Ex. 4 - CBI**

**Ex. 4 - CBI**

Senior Vice President

Microbac Laboratories, Inc.

4359 Linglestown Road

Harrisburg, PA 17112

(P) **Ex. 4 - CBI**  
(M)

[attachment "Techlaw contract.pdf" deleted by Dave Russell/ESC/R3/USEPA/US]